

CORRIGE FOR “MULTIPLICITY ONE AT FULL CONGRUENCE LEVEL”

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Without explicit mention, all the references are to the paper “Multiplicity one at full congruence level” available at

<https://arxiv.org/pdf/1608.07987.pdf>

- (1) At the end of the proof of Proposition 2.11, the equality $W^?(\tau) = W_{\text{obv}}(\tau)$ does not follow from [Gee11, §4.2]. Rather, one should combine [GHS18, Exemple] and [Her09, Theorem 11.3].
- (2) In item (5.1) and the discussion after it, the variety X_K should be replaced by its quotient by the action by the finite group $(\mathbf{A}_F^\infty)^\times / (F^\times((\mathbf{A}_F^\infty)^\times \cap K))$.
- (3) The reference to [BD14, proof of Lemma 6.2] at the beginning of page 17 should be replaced by [BD14, proof of Lemma 3.6.2].
- (4) At page 17, the limit

$$S_\psi(K^v, \mathbf{F}) := \lim_{U_v \lesssim K_v} S_\psi(K^v U_v, \mathbf{F})$$

is taken over sufficiently small compact open subgroups U_v of K_v in order to ensure that the residual representation belongs to $\text{Rep}_{\mathbf{F}}^\psi(K_v)$.

- (5) At page 17, the Hecke operators $T_w^{(1)}$ are only defined for places $w \in S' \cup \{w_1\}$ which are *distinct from* v .
- (6) Proof of Lemma 4.5: after the sentence “Let $\kappa = F(\mu - \eta)$ so that $P_\kappa = R_\mu$.” one should insert the following sentence: Let θ be the restriction of the surjection $\bigoplus_{\kappa \in W^?(\bar{\rho}^\vee(1))} P_\kappa \rightarrow D_0^\vee$ to P_κ . After that, the adverb “Thus” should be replaced by “We conclude”.

REFERENCES

- [BD14] Christophe Breuil and Fred Diamond, *Formes modulaires de Hilbert modulo p et valeurs d’extensions entre caractères galoisiens*, Ann. Sci. Éc. Norm. Supér. (4) **47** (2014), no. 5, 905–974. MR 3294620
- [Gee11] Toby Gee, *Automorphic lifts of prescribed types*, Math. Ann. **350** (2011), no. 1, 107–144. MR 2785764
- [GHS18] Toby Gee, Florian Herzig, and David Savitt, *General Serre weight conjectures*, J. Eur. Math. Soc. (JEMS) **20** (2018), no. 12, 2859–2949. MR 3871496
- [Her09] Florian Herzig, *The weight in a Serre-type conjecture for tame n -dimensional Galois representations*, Duke Math. J. **149** (2009), no. 1, 37–116. MR 2541127 (2010f:11083)

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